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Larch and Spruce are abundant, while Birch and Poplar cover over as a second growth the bared hillsides. The rich and varied display of mosses is surprising, and heavy cushions of humus formed by their decay hide the rocks with an elastic carpet.

L. P. GRATACAP.

Aconitum Noveboracense*, Gray.

BY FRED. V. COVILLE.

In the Columbia College herbarium are specimens of an *Aconitum* labeled, "*Aconitum uncinatum*, Greene, Chenango Co., N. Y., received May 30, 1857, A. Willard."

In the BULLETIN of the Torrey Botanical Club for 1885, (Vol. xii., p. 52), a single specimen of the same species is reported to have been found by A. L. Coville at Oxford, Chenango Co., N. Y. In the fall of 1885 the writer found at Oxford another station, the specimens numbering about sixty. Specimens of these, together with those from Greene, in the Columbia College herbarium, came to the hands of Dr. Gray, who decided, as had been before suspected, that the plant was not *Aconitum uncinatum*. He has given it the name *Aconitum Noveboracense*, with the following description:

ACONITUM NOVEBORACENSE, n.sp.

Inter *A. delphinifolium* et *A. Columbianum* collocandum propter racemum angustum subpauciflorum glabrum; caule bipedali erecto folioso; foliis membranaceis, 5-7-partitis, segmentis basi cuneatis trifidis, lobis incisis, lobulis et apicibus lanceolatis; casside gibboso-obovata superne late rotundata fere symmetrica, rostro breviusculo porrecto parum descendente; sepalis anticis angustis parvis; folliculis oblongis.

The casque is higher than that of *A. delphinifolium*, a far northwestern species, but broader, lower, more symmetrical, and much less rostrate than that of *A. Columbianum*. A. G.

Dr. Augustus Willard, the first to find the plant, has long since died, leaving neither herbarium nor plant-records. The original Greene station has therefore been lost, the single plant

* Read before the Botanical Club of the A. A. A. S., Buffalo meeting, August, 1886.

first found at Oxford has disappeared ; so that the only station now known is that about two and a half miles south of the village of Oxford. The plants grow in shaded alluvial soil, on the bank of the Chenango River.

The Mode of Destruction of the Potato by *Peronospora infestans*.*

The tuber of the potato being only an enormous development of the stem must possess all the parts that characterize the exogenous stem. That is, it should show the central pith, the woody or vascular layer, the bark and the epidermis. These may be readily seen with the naked eye on slicing the potato. The vascular layer appears as a semi-transparent line running along the cut surface about a quarter of an inch below the cuticle and rising to the eyes where it meets the layer that represents the bark. At these points the cuticle is exceedingly thin and here the assault of *P. infestans* is usually made. Its progress is marked by a black streak advancing from the eye along the layer of vascular tissue which it destroys, either rising to the other eyes in its course or meeting similar hosts of enemies advancing from them. A layer of the bark immediately under the peel is attacked in the same manner about the same time. Two parallel black streaks are therefore visible advancing side by side below the skin of the potato.

In these two layers the life of the potato resides and their destruction consequently ensures its death. To them the attack is confined. The starch-laden cells of the pith and those between the vascular layer and the epidermis are not injured. Indeed a tuber in this or even in later stages of decay, is one of the best sources from which can be obtained perfect starch-cells with their contents uninjured for microscopic study.

Here the action of *P. infestans* ends. But other enemies soon troop in and complete the ruin it has begun. *Fusisporium Solani* abounds, but the greater part of what remains, the starch cells, is destroyed by *Bacterium termo*, the ubiquitous and ever-ready agent of destruction. This soon reduces the tuber to a mass of decay and to its action is principally due the smell arising from rotten potatoes. E. W. CLAYPOLE, AKRON, Ohio.

* Read before the Botanical Club of the A. A. A. S. at the Buffalo Meeting, August, 1886.